









Notebook No. 2,
1880.

Wm. H. Dall, Actg. Asst. U. S. C. & G. Survey
In charge Schr. Yukon.

Sunday Aug. 22nd,

Time.	Bar.	Air Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	30.17	48.5	48.5	49	49	Calm
8 "	.18	49	50	50	49	"
12 M.	.19	51	51.5	52	50.5	"
4 P.M.	.19	53	53	53.5	51	"
8 "	.15	51	52	53	51	"
12 "	.10	48.5	51	50.5	50	NE

Day half clear, more cloudy toward evening.
Wind light or none. Being becalmed about
ten miles to the NE. from our anchorage
at Cape Lisburne, we anchor temporarily
about two miles off shore, waiting a wind.
In the afternoon put to sea again. While
at anchor the vessel tailed to the W. & S.
but the current appeared to be very moderate.

Monday Aug 23rd

4 A.M.	30.01	47	48	48.5	48	NE
8 "	29.96	43.5	48	48.5	48	"
12 M.	.90	46	47.5	47.5	47.5	NNE.

Time	Bar.	Det. Ther.	Dry b.	Wet b.	Water	Wind
4 P.M.	29.86	43.5	44.5	44.5	47.5	NNE
8 "	.79	44.5	46.5	46.5	47.5	"
12 "	.75	43.0	43.5	44.0	46.0	"

Strong N.E. gales all day with very uncomfortable short choppy sea. Sky overcast, with some fog.

Tuesday Aug. 24/80

4 A.M.	29.75	44	45.5	45.5	46.5	NNE
8 "	.75	46	46.5	47.0	46.0	"
12 M.	.79	47.5	49.5	49.5	47.5	E
4 P.M.	.81	50	52.0	52	46.0	ESE
8 "	.87	49	49.5	50	46.5	ENE
12 "	.89	47	49.0	48.5	46.0	NE

Weather overcast, wind light. The land as far as the eye can reach seems absolutely flat with no signs of the hills indicated on the chart and no land marks of any description. The offshore spit reaches ten or twelve feet above high water mark with occasional grassy sand dunes six to ten feet high er. and of small extent. Sticks of drift wood or whale ribs have been set up in many places by the natives, probably to serve as landmarks in their travels along the coast. The marks of their camps and abandoned houses are not in frequent.

Wednesday Aug. 25/80

Time	Bar.	Det. Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	29.91	44	48.5	48.5	46	NE
8 "	.96	45	46.5	46.5	44.5	"
12 M.	.98	45	48.0	47.5	44.5	"
4 P.M.	.98	57	53.5	53.0	45	"
8 "	30.00	45	46.0	46.5	45	"
12 "	.02	45	45.0	45.0	45	"

Weather mostly cloudy in early A.M.; later more than half clear. Wind moderate steady.

Stand in to the coast and send a boat ashore for observations as the weather is propitious. Anchor a mile and a half off shore about 10 A.M. Observations for time, latitude, declination, dip & intensity. About 4 P.M. observations ended, weigh anchor and stand to the northward.

A whale carcass, passed by us, about 7 A.M., about ten miles to the southward of our anchorage had drifted up to us by the time we weighed anchor. Early in A.M. spoke bark Dawn, Nickmot, with 6 whales who had seen the cutter (to the westward probably) about a week previous. The whales are all doing well this season. They thought we could hardly get beyond Pt. Belcher on account of the pack ice.

Thursday, Aug. 26, 1880

Time	Bar.	Det.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	30.05		43.5	44	44	44.5	NE
8 "	.08		46.	46	46.5	45	"
12 M.	.10		45	46	46.5	45	"
4 P.M.	.00		46	47	47.5	45.5	"
8 "	.08		45	46.5	47.	45	"
12 "	.10		45	49	48.5	44.5	"

Weather mostly overcast, wind moderate steady. Came upon the S.E. edge of the pack about 2 A.M. while beating to the northward. Several whalers in sight. Pass several carcasses of whales stripped of their blubber and some small pieces of drift ice. About 3 P.M. spoke and boarded bark Hunter, Capt. Fisher of New Bedford with eleven whales one of which was cutting. A twelfth was being pursued as we left her, and was afterward taken. A little later speak the U.S.S. Corwin from Pt. Barrow where she succeeded in getting, but reports only a quarter of a mile between the ice & the shore at the Seal Horse Islands. The capt. of the Hunter reported the ice in our vicinity as having moved inshore 15 $\frac{1}{2}$ miles within 24 hours. Capt. Hooper got within a few miles of Herald Id. but had no news to report.

In view of the movements of the ice I decide to anchor and await further developements. Anchor about a mile offshore a little to the Northward and eastward of Pt. Belcher. Native canoes come alongside and we purchase a little fresh meat.

Friday Aug. 27/80.

Time	Barom.	Det.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	30.09		42		45.0	45	NE.
8 "	.08		41.5		44.5	44.5	"
12 M.	.04		41		42.5	42.5	"
4 P.M.	29.98		41		42.5	43.	"
8 "	.93		40		40.5	41.	"
12 "	.85		39		42.0	43.	"

Weather overcast. One glimpse of sun in P.M. but mostly foggy. Wind fresh & raw from the ice to the northward. Observations for dip intensity and magnetic azimuth. Astronomical observations fail from want of sunshine. There is much fragmentary coal on the beach, apparently pushed up by the pack ice from the bottom of the sea. Draw the seine but get only one or two small sculpin. In P.M. speak the steam whaler Mary & Helen, Capt. Owen

of New Bedford with 22 whales. He reports that the ice moved in three miles last night. Most of the fleet have come inshore and are in sight, all apparently doing well. Evening, wind lighter, foggy. Got two obs. for time from the ship in P.M. The current is strong here to the northward and eastward especially with the tide flowing.

Saturday Aug. 28/80

Time.	Bar.	Det.	Ther.	Dry b.	Wet b.	Water.	Wind.
4 A.M.	29.75	40	44.5	45	44.5	NE	
8 "	.69	40	41.	41	43	"	
12 M.	.63	41	42.5	42.5	45	"	
4 P.M.	.64	40	42	42	42	NE	
8 "	.69	39.5	41.5	41	40	"	
12 "	.78	40.5	42.5	42.5	45	"	

Morning overcast, wind fresh. barometer falling. As the ice is reported by all as moving in toward the coast, and no prospect with in a reasonable time of reaching Point Barrow, the weather is unfavorable for further observations here and promises worse rather than better, and the wind is fair for the south where much more work remains to be done, I decide to sail from Pt. Belcher, southward, at once.

Sail at 9 A.M. Pass Icey Cape about 5 P.M. Work over records.

Sunday Aug. 29/80

Time.	Bar.	Ther.	Dry b.	Wet b.	Water.	Wind
4 A.M.	29.79	39.5	40	40.5	45	NNE
8 "	.82	40.	42	42	47½	"
12 M.	.81	43.	46	46	49½	"
4 P.M.	.77	43.5	46	46	49½	N
8 "	.71	46	49	49	50	NNE
12 "	.69	47	48	48.5	50	NE by E

Morning overcast, sun out at times during the day. Wind fresh sometimes squally. At 11 A.M. pass Cape Lisburne where it wooleys heavily inshore. At 3 P.M. pass Pt. Hope off which is a rip, due to tide & current. The Corwin and an unknown schooner (Loleta, Dexter S. Ids) are laying under the lee of Pt. Hope. Both are tailing with the wind, showing that the current in there is not very strong at times. Keep on toward Chamisso Harbor. Work over records. Late in evening the wind begins to die away.

Monday Aug 30/80

Time	Barom.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	29.64	46.5	47.5	48	50.5	Calm
8 "	.61	47	47	47	57.0	NE
12 M.	.59	47	49.5	49.5	57.5	Calm
4 P.M.	.52	50	53	53	52.5	WNW
8 "	.57	46	49.5	49.5	57.0	"
12 "	.52	46	48.5	48.5	57.5	"

Morning nearly calm, later fresh air. Weather half clear. At noon, near Cape Krusenstern. Later in the day get observations for time while in the meridian of the Cape. Wind freshens at night Cape low with a gray bluff behind it.

Tuesday Aug. 31st

4 A.M.	29.50	43.5	46	46	57	WNW
8 "	.48	44.0	46	46	48.5	"
12 M.	.48	45.5	48.5	48.5	49	"
4 P.M.	.46	49.5	49.5	49.5	48.5	WSW.
8 "	.46	46.5	48	48	49.5	"
12 "	.46	44.5	47	46	48	"

Weather overcast with glimpses of sunlight especially in the afternoon. Wind fresh to moderate. About 6 A.M. anchor in Chamisso Harbor, Eschscholtz Bay Kotzebue Sound. Get obs. for time latitude declination dip & intensity and to fix station, on the

spit of Chamisso Id. The highest point of the island is marked by a hem drift-wood stick, bearing the following inscriptions. "H.B.M.S. Blossom, Sept. 1826; H.B.M.S. Herald, 1848; H.B.M.S. Plover July 1849; U.S.S. Corwin 1880; to which was added "U.S.S. Yukon, 1880." On another shorter stick was engraved T.A.H. ЭКСПЕДИЦИЯ 1838 с 29 авг. 10 септ. or "Russian American Company's (Kashevaroff's) expedition, from Aug 29 to Sept 10, 1838" A board had been attached to this marked "H.M.S. Plover, Aug. 1857, a bottle 10 ft Magⁿ North"; other parties had recorded on this board, "Victoria" "Fanny 1865" and "Bark) Oliver Crocker 1865"; the wood which seems to have stood here fifty four years was in good preservation. The bottle had probably contained information, if any Franklin survivors should find it for their finding buried stores. The island is of mica schist and gneiss with some quartz dykes. Blueberries, Rubus chamaemorus, service berries etc. were ripe, cranberries not quite ripe. Dwarf birch alder and willow were noticed growing on the island.

Wednesday Sept. 1st/80

Time.	Bar.	Ther.	Dryb.	Wetb.	Water	Wind
4 A.M.	29.46	43.5	45	45	47.5	W
12 M.	.59	45.0	48	48	48.0	Squally
8 P.M.	.64	44.5	45	45	47.5	Wby S

Weather cloudy with glimpses of sun. Wind fresh making a choppy sea, to avoid which we weigh anchor at 9.30 A.M. and stand across under the lee of Choris Peninsula, where it is not much better. Anchor there about 10.30 A.M. Work on Monthly Reports & journals. Send the boat ashore for water but it proves not good. Wind too high for field work. Rains in P.M.

Thursday Sept 2nd

4 A.M.	29.68	44	44	44.5	47.5	Wby S
12 M.	.75	44	46	45.5	49.5	SW
8 P.M.	.76	44.5	47	47.0	49.0	"

Weather cloudy with showers in A.M. Half clear in P.M. Wind puffy, fresh to moderate. Tide low at 10 A.M. high at 4 P.M. Rise & fall between three and four feet. Take the vessel over toward the main shore and anchor there before breakfast. About 10.15 start in the large cutter for the shore with the intention of viewing the celebrated

ice cliffs first described by Kotzebue. Land on a small low Point near some old huts and proceed along the beach about a mile, the banks or bluffs being chiefly of volcanic breccia or a slaty rock of gneissoid texture. They were from fifty to fifteen feet in height above the sea, rising into low hilly slopes behind; nowhere rising into peaks, and probably nowhere over 60 feet in height. A change then took place in the character of the banks. From reddish volcanic rock they changed into a grayish clay largely intermixed with vegetable matter; in places intermixed, in other places forming a stratum in the clay. Near the beginning of these clay banks, where they were quite low, i.e. not rising to a brow of over 20 feet, one layer of sphagnum containing marl of freshwater shells (among which were *Psidium* and *Valvata*) was noticed. This layer was some six inches thick.

The clay was of a very tough consistency, and though wet did not yield much, under the feet. The breaking of the

Thursday Sept 2nd. cont.

sea against the foot of these banks and the undermining that follows, causes them to fall down and the rough irregular talus that results, is mingled with turf and bushes from the surface above.

A little further on a surface of ice was noticed. It appeared to be solid and free from mixture of soil except on the outside.

Further on the same phenomenon was encountered again on a larger scale

and this continued about two miles and a half to Elephant Pt. and there the high-erland turns to the S & W and we followed it no further. For a considerable distance the "cliffs" were double. That is there was an ice face exposed near the beach, with a small talus in front of it, and covered with a coating of soil two or three feet thick on which a luxuriant vegetation was growing. All this might be thirty feet in height, and on climbing to the brow of the bank the rise from that brow proves to be broken, hummocky, and full of crevices and holes, in fact a second talus on a larger scale, ascending to the foot of a second ice face above which

was a thin (1-2½ feet) layer of soil covered with herbage. The brow of the second bluff might be eighty feet or more above the sea. Thence the land rose slowly and gradually to a rounded ridge, reaching a height of three or four hundred feet only at a distance of several miles from the sea and with no mountains or other high land about it whatever. At the highest part of this ridge within a quarter to a half a mile from the sea perhaps 250 feet above the sea, at a depth of a foot we came to a solidly frozen stratum, consisting chiefly of sphagnum and vegetable mould but containing good sized lumps of clear ice. There seemed no reason to doubt that the extension of the digging would have brought us to the solid ^{clear} ice such as was visible at the face of the bluff below. That is that the ridge itself was chiefly composed of solid ice overlaid with clay and vegetable mould. It was noticeable that there was much less clay over the top of the upper ice face than was

Thursday, Sept. 2nd, cont.

visible over the lower one, or over the single face when the land and bluff were low, near the beach. There was also less vegetable matter, apparently. Near the beach six or eight feet of clay was observed in some places, without counting what might be considered as talus matter from farther up the hillside. Only in one place did we notice some fine reddish gravel, and nowhere in the talus or strata any stones. The ice face near the beach was not uniform. In many places it was covered with clay to the water's edge. In others, where the bank was less than ten feet high, the turf had bent, without breaking, when undermined and curving over, presented a mossy and herbaceous front quite to high water mark.

The ice in general had a semi-stratified appearance as if it still retained the horizontal plane in which it originally congealed. The surface was always dirtied from dirty water from the soil above &c. The dirt was however merely superficial. The outer inch

or two of the ice seemed granular or like compacted hail and was sometimes whitish. The inside was solid and transparent or slightly yellow tinged (like peat water) but never greenish or bluish like glacier ice. But in many places the ice presented the appearance of immense cakes or fragments irregularly disposed, over which it appears as if the clay &c had been deposited. Small pinnacles of ice ran up into the clay in some places and, above, holes were seen in the face of the clay bank, where it looked as if a detached fragment of ice had been and had been melted out leaving its mold in the clay quite perfect. In other places the ice was penetrated with deep holes into which the clay and vegetable matter had been deposited in layers and which (the ice melting away from around them) appeared as clay & muck cylinders on the ice face. Large rounded holes or excavations of irregular form had evidently existed on the top of the ice before the clay &c had been deposited. These were usually filled with a

Thursday Sept. 2nd /80. contd.

finer grained deposit of clay with less vegetable matter and the layers were waved as if the deposit had been affected by current action while going on. In these places especially, was noticed the most unexpected fact connected with the whole formation (which was however by no means confined to these spots;—namely a strong peculiar smell as of rotting animal matter, burnt leather and stable manure combined. This odor was not quite the same at all places but had the same general character. On the other hand there was a large part of the clay which had no such smell. At the points where the smell was strongest it was observed to emanate particularly from darker pasty spots in the clay though permeating the whole, leading to the supposition that these might be remains of the soft parts of the mammoth and other animals whose bones are daily washed out by the sea from the clay talus. In those places or near them where the smell was strongest a rusty red soft lichen or lichenlike fungus grew on the wet clay of the talus in extensive patches. Some of

these and some of the bad smelling deposit was secured, also as many bones of the fossil elephant fossil buffalo &c as we could carry including a mammoth tusk five and a half feet long, six inches in diameter but with both ends gone. Dwarf birches, alders seven or eight feet high with stems three inches in diameter, and a luxuriant herbage, producing among other things numerous very toothsome berries, grew with the roots less than a foot from perpetual solid ice.

The formation of the surrounding country showed no rocky hills from which a glacier might have been derived and then covered with debris from their sides. The continuity of the mossy surface showed that the ice must be quite destitute of any motion and the circumstances all appeared to point to one conclusion, that there was a ridge of solid ice, rising several hundred feet above the sea, and higher than any of the land about it. The ice in this instance taking the function of a regular stratified rock upon itself.

On our return to the vessel about 6.30 P.M. we found that four large canoes with about forty natives had arrived from the eastward supposing us to be traders.

Friday Sept. 3rd 1880

Time. Barom. Ther. Dry b. Wet b. Water. Wind.

4 A.M.	29.78	43	44	44.5	49	SSW
8 "	.78	44	44.5	44.5	49	S
12 M.	.71	46	49.5	50	49.5	"
4 P.M.	.67	43.5	44	44	49	SW
8 "	.70	41.5	43.5	44	49	W by N
12 "	.71	43	44	44	48.5	"

Weather cloudy with fresh wind and frequent heavy showers. At 6 A.M. sail from Eschscholtz Bay for Bering Strait. Work over records and computations. Later nearly calm.

Saturday Sept. 4th

4 A.M.	29.68	41.5	43	43	47	SE
8 "	.50	41.5	43	43	48	"
12 M.	.45	44	45.5	45.5	48	SW
4 P.M.	.46	41	43	42.5	48	W
8 "	.46	40	43	43	48.5	WNW
12 "	.46	41	44.5	44	45	"

A.M. Overcast & cloudy rainy. P.M. cloudy sunout for a few minutes Wind variable strong. Work on records.

Sunday Sept. 5/80

Time. Barom. Ther. Dry b. Wet b. Water. Wind.

4 A.M.	29.46	39	43	43	49	NW.
8 "	.46	38	38.5	38.5	37.5	"
12 M.	.44	41	43	43	47.5	"
4 P.M.	.40	42	44.5	44.5	47	NW. by N
8 "	.36	39.5	41.5	41.5	47	"
12 "	.36	39	43	42	46.5	"

Day cloudy with showers, fog at times and occasional sunshine. Wind fresh increasing to a tolerable gale in P.M. and against the tide or current forming a ^{heavy} ~~tolerab~~ sea.

Morning about 7 o'clock, within about 4 miles of East Cape surrounded with floating fragments of ice, with more ice forming a barrier between us and the land. The bight SW. of East Cape is full of ice. Begin our soundings and serial temperatures on a line across the Strait and complete it just as it becomes impracticable from the heavy sea to continue. Run for Port Clarence for shelter, finding the sea smoother under the land, and anchor off the mouth of the port in seven fathoms about 8 P.M. Weather squally and nasty. Sundogs at night.

Monday September 6th 1880

Time.	Barom.	Ther.	Dry b.	Wet b.	Water.	Wind.
4 A.M.	29.37	38	40.5	40	46½	NW by N.
8 "	.39	40	41	41	46	"
12 M.	.40	41	43.5	43	47.5	"
4 P.M.	.41	41	43.5	43.5	48	NNW
8 "	.41	41	42	42	48	"
12 "	.40	43	44	43.5	48	"

Morning about 4 A.M. get under way and run into Port Clarence, passing Pt. Spencer in the fog and getting nearly to Grantley Harbor before perceiving it. Run back and anchor near Pt. Spencer at 8 A.M.

Day partly cloudy and foggy with rain squalls and sun out at times. Snow on the hills which fell last night. Wind keen and fresh nearly all day. Rain in the evening. Observations on the eastern shore of Pt. Spencer on the north side of a small bight in the spit; for declination, dip, time and latitude, with angles for fixing station. The point is very low with some small fresh water lagoons between the beaches. No village but some old deserted mined houses and ten or fifteen natives camping in temporary summer tents. Plenty of drift

wood on the beach. The northern shores of Port Clarence are high barren and benched near the shore with a little lowland near the beach which is largely rocky. Par helia at noon.

Tuesday Sept. 7th/80

Time.	Barom.	Ther.	Dry b.	Wet b.	Water.	Wind.
4 A.M.	29.39	44	44	43.5	48	N by W
8 "	.45	40.5	42.5	42	47	NNW
12 M.	.47	42.5	44	43.5	48	"
4 P.M.	.54	42.5	47	45.5	48	"
8 "	.60	41	44	42.5	47½	"
12 "	.65	41	43	42	47	"

Stiff gale all day preventing any work. Sky partly clear but haze and fog overhanging the high land where the snow of the night of the 5th has mostly gone. Work over records and Bering Strait section.

Wednesday Sept 8

4 A.M.	29.66	40.5	42.0	41.5	46.5	NNW
8 "	.69	41.5	41.5	41.0	47.5	"
12 M.	.72	40.5	49	48.5	48	WNW
4 P.M.	.70	42.	45	44.5	48	W
8 "	.72	42.	44	43.5	47	NW
12 "	.74	41.5	44	43.	47	"

Weather variable. Squalls of rain alternating

with showers and intervals of sunshine. Wind light to fresh. Observations for time latitude, declination and intensity. Several canoes of King's Island people come off to us.

Thursday Sept 9. 1880

Time.	Barom.	Det. Ther.	Dry b.	Wet b.	Water.	Wind.
4 A.M.	29.74	41	43	43.0	46.5	NW
8 "	.74	40	42	41.5	47.5	NE
12 M.	.76	44	45	44.5	48.0	E
4 P.M.	.72	43.5	47	46.5	48.5	NNW
8 "	.74	39.5	42.5	41.5	44	"
12 "	.76	37	41.5	41.0	45	"

Weather cloudy, later a little sunshine. Wind at first very light, afterward moderate to fresh. Sail from Port Clarence at 10.45 A.M. for the Diomedes. See King's Island clearly from the entrance. It is rounded and highest toward the NW end. Thence it slopes gently toward the SE. The extreme SE end being a little higher than the intervening land. The shores mostly bluff.

Friday Sept. 10 /80

4 A.M.	29.77	37.5	39.0	38.5	43.5	NNW
8 "	.78	38.5	41.0	40.5	44.0	"
12 M.	.77	41.5	42.5	42.0	44.7	"
4 P.M.	.76	40.5	40.5	40.0	44.5	"
8 "	.75	36.5	38.0	37.5	37.0	"
12 "	.77	36	38.5	38.0	36.6	"

Morning sky with broken clouds. Afternoon cloudy. Wind early fresh, later strong gales. About 7 A.M. come to anchor off the SE. end of the Big Diomedes. Baker & Hoyer go ashore at the snowfilled mouth of a steep gulley, the only place where a landing could be had on this side. Obs. for time, latitude, azimuth, dip and intensity. From the ship obs. of currents surface and sub-surface temperatures and bearings on adjacent land. The Diomedes are granitic mounds with sides worn to cliffs by the action of the sea, without beaches, the shores fringed with enormous waterworn boulders. A few gullies convey the melting snow from their irregular but nearly uniformly high tops. Here are the only landing places, and partly on the accumulated talus in the largest gulley and partly by digging away behind this, a settlement of hardy Eskimo has established itself on each island. That on the little Diomedes is said to be the largest, it is on the south end of the island. About thirty natives came off to us in three canoes from there. There is

also a settlement on the SW. side of the Big Diomedé which we did not see. There was a cache and had been a hut on a small level spot, at the side of the gulley where observations were made, some sixty feet above the water. By going over the top of the island the inhabitants could communicate with the village on the SW. side. Those who came off to us, gave us the following names for the islands &c. — Little Diomedé Ing-ah-khlük'; Big ditto, Im-ah Khlük'; Fairway Rock Wee'-yüh; East Cape Nū-wūkh'; People on Little Diomedé, Ing-ūh-klee-mūt'; on the big one, Imah-klee-mūt'; on East Cape No-ghwāh-mūt'; Reindeer people Kūgh-ūkh-tūz'-ū-mūt'. The islands are frequented by millions of small auks and divers, which afford a very good article of food to the natives who also get seal and walrus, but the land has no other inhabitants in the way of animals. The chief support of these people is derived from their position as traffickers between the natives of the two continents.

On leaving Port Clarence last evening we obtained a very good view of the coast between it and Cape York. It appeared to

consist entirely of stratified rocks, which near the shore formed a high bench with beaches here and there, but mostly cliffy, interrupted by a few grassy valleys. The bench, and the frost rounded peaks a little further inland behind it, seemed to be almost wholly destitute of vegetation, and parts of it were covered with patches of old and a thin layer of new fallen snow. At 3 P.M. observers came aboard, and we sail for Plover Bay, the wind freshening to a tolerable gale. From the appearance of the sky and the reports of the natives it seemed that the ice extended out into the Strait a considerable distance from East Cape and filled the bight to the south & west from it.

Saturday Sept 11/80

Time	Barom.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	29.80	35.5	39.0	38.5	36	NNW
8 "	.83	36.5	38.5	38.5	38	"
12 M.	.89	38.5	41	40.5	37.3	"
4 P.M.	.87	40	42	42.0	37.5	SW by S.
8 "	.87	39	40	40.5	37	Calm
12 "	.88	37	39	39.5	36.5	"

Kept on a straight course for Plover Bay (Indian Point) taking half hourly surface temperatures. About 1.30 A.M. came up with large fragments of green pack ice and came to until daylight. Weather cloudy with short intervals of sunshine. Late in the afternoon nearly clear. A light fall of snow in the night. Wind strong gradually dying away, at sunset calm. Spent Bark Progress, Lapham, 17 whales. Work over letters and records. Late at night come to off the entrance to Plover Bay Bark Sea Breeze trying out oil near by.

Sunday Sept 12/80

Time.	Bar.	Ther.	Dry b.	Wet b.	Water.	Wind.
4 A.M.	29.83	35.5	38.0	38.5	36	Calm
8 "	.80	37	36.5	36.0	38	"
12 M.	.75	42.5	43.0	42.5	39 $\frac{1}{4}$	"
4 P.M.	.70	40	41.5	41.5	40	E.
8 "	.66	38	38.5	39	39	"
12 "	.62	34.5	39.5	39	39	"

Morning almost calm. later fresh keen wind.
Day clear and fine. Anchor in Port Providence, Plover Bay, about 11.45 A.M. Send the boat in before anchoring, and get obs. for latitude, time dip and intensity. The

Steam whaler Mary Helen, Capt. Owen; brig Tropic Bird, Capt. Derringham and Haw. sch. Julia A. Long, Capt. Gillies, in port. Bark Progress comes in later. Cornelius, a native, who speaks English very well, tells me the Reindeer men call themselves, 'Isau-yu-at' and that the Eskimo have only a commercial intercourse with them. The languages he says are entirely different. A party of natives from East Cape, including old Notokin's son last season established themselves on the S. head of Archangel Gabriel Bay. others at a point further north and more are likely to follow urged by the growing scarcity of seal and walrus about the strait. There seems to be a doubt if the death of so many people on St. Lawrence Id. winter before last was due to starvation or to some disease. Cornelius says when all the natives of one village were found dead in their beds, they were not emaciated and there was blubber in the blubber rooms and plenty of walrus hide, which they would not have left if they were starving.

Monday Sept. 13, 1880

Time.	Barom.	Ther.	Dry b.	Wet b.	Water.	Wind.
4 A.M.	29.57	32.5	39	38.5	38.5	E
6 "		31.5				
8 "	.51	36	39.5	39.5	39	"
12 M.	.49	41	40	39.5	39	"
4 P.M.	.46	42	43	42.5	39	Calm
8 "	.52	33.5	41	41.0	39.5	N
12 "	.52	39.5	42.5	42.5	39.5	"

Weather with some sunshine early in the morning, later cloudy, nearly calm.

Obs. for time and magnetic azimuth.

Capt. Lapham & Owen come aboard. Capt Owen & Derringham confirm the experience we have had this year of finding warmer water north of the Strait than south of it, going north early. There are three sets, or currents in the Arctic. One running north from Cape Lisburne along the coast to Pt. Barrow. Another running in the same trend as the land east from Pt. Hope over toward Herald Id., offering an opportunity of getting to the westward when there is still ice to the southward extending east of the meridian of the Strait. The last runs along the coast from East Cape north and west.

There is often a grounded pack around & on Herald shoal with water about it. Capt. Owen reached Pt. Barrow and returned in two hours, narrowly escaping being shut in by the ice which was only six miles off the point and shut in just after he came back around it. The schr. Alaska was the only sailing vessel to get round to the point and she was shut in there (aground) several days. He (Owen) had never been around Pt. Barrow without being shut in several times during his stay. The shoal on Rodgers chart north of St. Mathew he felt sure had no existence, having cruised there a good deal. In going north in the Litch Perry, in 1879, he had had a ^{sea} temperature south of the Strait of 37° but on getting north of Cape Lisburne he found it 42° . All agreed that no two seasons were alike in the Arctic, or rather, that no one could form any probable idea of what one season would be from the character of that which preceded it. This relates to the character and move-

ments of the ice, the weather and the movements of whales. The currents are largely affected by the wind and tides chiefly by the latter. The motion of the ice depends more on the winds, but not wholly.

Tuesday Sept. 14/80

Time	Barom.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	29.58	38.5	42	41.5	39	N
8 "	.64	35.0	38	38.5	39	"
12 M.	.66	41.5	41	40.5	40	S
4 P.M.	.64	41.5	42.5	42.5	39	"
8 "	.64	39.0	41.5	41.5	39	"
12 "	.53	40.0	43.5	43.0	38	SE

Morning half clear, later cloudy; bad weather brewing apparently. Wind fresh, in the evening squally. Obs. for determination of station on the spit.

A boat arrives from St. Laurence Id. bringing the revenue officer Mr. Wykoff and several men of the Schr. Solita which they report lost on St. Laurence Id. three or four days ago in the bight fifteen or more miles eastward from the NW. point of the island. A consultation is held by the masters in port and it is decided that the Schr. Long and the steam whaler Mary & Helen will go over, the men to go to the Sandwich Ids in the Long. We

offer a passage to the Revenue officer with such accommodations as we have, but he decides to sail for San Francisco in the Progress. The brig Tropic Bird goes to sea in the morning. Work over accounts and letters.

Wednesday Sept 15/80

Time	Barom.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	29.41	40.5	53	53.5	38.5	SE
8 "	.38	42.5	44	44.0	39	"
12 M.	.37	44.5	46.5	46.5	41	"
4 P.M.	.39	45.0	41.	41.5	41	SSSE
8 "	.41	41.0	45.	45.5	39	"
12 "	.44	41.0	43.	44.0	40	NNE

Morning cloudy, later sun out at times. Wind fresh and fog rolling in. Halo in P.M. Work over records. Letters & accounts prepared to go down by the Mary & Helen.

Thursday Sept 16

4 A.M.	29.46	40.0	42.5	43	39.5	NNE
8 "	.55	34.5	36	36.5	38.5	"
12 M.	.62	34.0	36	36.5	38.0	"
4 P.M.	.69	34.5	40	39.5	38.5	"
8 "	.80	32.0	35	34.5	37.5	NNW
12 "	.88	30.0	*	-	36.5	"

Morning blowing hard, with snow. Sun out

*Hygrometer in cabin to avoid freezing

at times, but a stiff breeze prevents leaving port or any field work. Obtain from Capt. Owen several of his old logs to extract temperature observations. The sch. Long sails for the wreck on St. Laurence Island

Friday Sept. 17/80

Time.	Barom.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	29.90	30.5	—	—	37	NNE
8 "	.94	34.5	35.5	35	39.5	"
12 M.	.94	35.0	36	35.5	38	S
4 P.M.	.88	37.5	37	38	40	"
8 "	.89	33	35	35	43.5	SSE
12 "	.82	35	—	—	44	"

Morning nearly calm, clear, later cloudy with fresh wind. By the kindness of Capt. Owen, after weighing anchor about 6.10 A.M., we are towed out of Plover Bay, & toward Marcus Bay when the wind freshens and we make sail along the northern coast of St. Laurence Id. The sch. Long comes out of Marcus Bay and with the Mary & Helen stands over toward the island to rescue the crew of the Loleta.

* Blanks due to hygrometer being taken into cabin to avoid freezing.

Saturday Sept. 18/80

Time.	Barom.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	29.75	38	—	—	44	SSE
8 "	.72	39.5	42	41.5	45	SE
12 M.	.70	43	43	42.0	45	SE by E
4 P.M.	.70	40.5	41.5	41.5	44.5	ESE
8 "	.72	40	42	41	45	"
12 "	.69	40	43	42	46	"

Day mostly cloudy with a few glimpses of sun and snowflurries. Cruising along the north shore of St. Laurence Id. against a strong head wind & later a heavy sea.

Sunday Sept. 19th

4 A.M.	29.70	41.5	44.5	43.5	45	ENE
8 "	.65	43	43.5	43.0	45.5	"
12 M.	.60	48	44.5	44.5	42.5	ESE
4 P.M.	.52	44	46	46	45	"
8 "	.45	44.5	44	43	46	SSE
12 "	.33	43	45	45	44.5	S by W.

Morning cloudy later foggy. Wind fresh. Round the east end of St. Laurence, meeting a ^{very} heavy ^{southerly} swell. Found in 17 fms, the N. edge of the SE. pt. N. $\frac{1}{2}$ W.; S. edge do. NW. by W.; near-est land NW. by N. $\frac{1}{4}$ N. It is evident we cannot make a landing even if the wind subsides, at least for several days, so we

keep away for St. Mathew. The land at the points is rather high and bluff with flat or low land between the high and the beach. Shore rocky. According to Capt. Owen there is a small E. & W. spit at the NW. point on which the village is and where a lee can be made from N. and NE. winds.

Monday Sept 20, /80

Time	Barom.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	29.38	42	43.5	43	45	SW by W
8 "	.47	45	43.5	43	44	"
12 M.	.53	39.5	42.0	42	44	"
4 P.M.	.60	39.5	39.5	39	44.7	"
8 "	.68	36.5	40.0	41	42.5	WSW
12 "	.72	37.0	38.5	38	43	"

Day cloudy with snow squalls and a brisk gale and heavy sea. We were obliged to lay to under a double reefed foresail, until midnight with a heavy bad confused sea running.

Tuesday Sept. 21st

Time	Bar.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	29.75	36	39.5	38.5	42.5	WSW
8 "	.75	43	40.0	41.5	44.0	W
12 M.	.72	37	40.0	39.5	43.5	"
4 P.M.	.64	38	40.5	40.0	44	"
8 "	.59	37	40.5	39.5	43	WNW
12 "	.58	36.5	39.0	38.5	43	N.

Morning cloudy cold; sun out at times later in the day. Wind somewhat moderated sea a little easier. Put her under reefed foresail, jib and trble reefed mainsail. Later give her the flying jib and shake a reef out of the mainsail. Too rough for any clerical work.

Wednesday Sept. 22/80

Time	Bar.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	29.52	37	38.5	38.0	43.5	N
8 "	.72	39	41	40.5	44	"
12 M.	.75	44	47	47.0	42	"
4 P.M.	.78	39.5	42	41.5	42.5	NW by N
8 "	.78	38	41.5	41.0	43	"
12 "	.79	38	42	41.5	45	"

Day with snatches of sunlight and high squally wind, fresher later in the day. Morning make the NW. end of St. Mathew and run along the northern shore vainly seeking a lee until we reach Cape Upright. Get obs. for time just off the Cape, from the vessel and determine to try landing in a small bight in the Cape although attended with some risk. Come to anchor under the Cape about 10 A.M. The party succeed in getting

ashore, with a drenching, get some obs. for latitude and bearings on adjacent land. The wind increased and the boat gets safely back to my great relief, after which a few more obs. for time are taken and we weigh anchor and proceed under shortened sail toward Unalashka. Wind very fresh, puffy, with bad sea.

Thursday Sept. 23/80

Time.	Barom.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	29.78	38.5	40.5	40	44.5	NW by N
8 "	.80	38.0	43.0	43	45.5	"
12 M.	.82	39.5	41.5	41.5	45.5	"
4 P.M.	.81	43	43.0	43.0	45.0	NW by N
8 "	.90	40	43.0	42.5	45.5	"
12 "	.88	39	42.5	42.0	45.5	"

Day cloudy, sun out at rare intervals. Wind strong, squally, sea heavy. Vessel winged out & making good progress but rolling so as to prevent work.

Friday Sept. 24th

Time.	Barom.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	29.88	39	41	41	46	NW by N
8 "	.86	39.5	42.5	42	47.5	SW
12 M.	.78	41	39	38.5	47.5	SSW
4 P.M.	.62	42	44	44	47.5	S
8 "	.42	41.5	44	44	47	SSE
12 "	.12	44	42.5	42.5	46	SSW

Morning cloudy, wind lighter and less favorable, shifting ahead. Later wind veers to the southward and in the evening rises to a smart gale, obliging us to shorten sail and attended with so much pitching & tossing that all work is suspended.

Saturday Sept. 25/80

Time.	Bar.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	29.12	45.5	43	43	47	SSW
8 "	.14	45.0	43.5	43	47	"
12 M.	.18	45.0	47	47	47	"
4 P.M.	.22	45.5	47	46.5	47	"
8 "	.25	46.0	45	44	46	"
12 "	.30	45.0	48	47.5	46	"

Day cloudy with rain & hail and so stiff a gale as to interrupt all work.

Sunday Sept 26

Time.	Bar.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	29.32	43.5	47	46.5	46.0	SSW
8 "	.34	44	46.5	46.5	46.5	SSW
12 M.	.38	46	48.5	49.0	47.0	"
4 P.M.	.32	45	48	47.5	46.7	Sky W
8 "	.23	44.5	46	45.5	46.0	"
12 "	.21	45	46	46.0	46.5	"

Day cloudy & rainy with heavy sea and continuation of severe gale. No work done or practicable.

Monday Sept. 27/80

Time.	Bar.	Ther.	Dry b.	Wet b.	Water.	Wind.
4 A.M.	29.22	44.5	46	46	46	WSW
8 "	.34	44	45.5	45	46	"
12 M.	.48	44	46	46	46.5	"
4 P.M.	.54	44	45	45	46	"
8 "	.54	42	44	43.5	46	"
12 "	.47	43.5	45	44.5	45.5	SSW

Day cloudy with rain & glimpses of sun.
Gale continues but wind shifts and the
sea goes down a little. Work impracticable.

Tuesday Sept. 28th

4 A.M.	29.16	44	42	41.5	45.5	ESE
8 "	28.84	43	43.5	44.0	45.5	"
12 M.	28.31	42	41	40.5	40.5	"
2 P.M.	28.25					
4 P.M.	28.28	43.5	44	44.5	44.5	NE
8 "	28.48	41.	44	44	43.5	NNE
12 "	28.70	40	42.5	42	43.0	N.

Day cloudy with rain and the heaviest gale we have experienced. Barometer reaches 28.25, the lowest recorded in this region (=28.50 per mercurial standard barometer reduced to 32° F.) In the morning see the western end of Akutan, run over for Captains Bay in very heavy squalls & fog owing to which we miss the entrance and

are carried by the current off Cape, Cheerful near to the fishing station and retreat being impossible are obliged to put to sea, a most severe gale raging.

This continues all night and surpasses anything ever experienced by any one on board. During the night some of the squalls were excessively violent almost equal to a hurricane

Wednesday Sept 29/80

Time.	Bar.	Ther.	Dry b.	Wet b.	Water.	Wind.
4 A.M.	28.90	43	45	44.5	43	N
8 "	29.15	42.5	44.5	44.0	42.5	NW
12 M.	.30	43.5	45.5	45.5	44.7	"
6 P.M.	.32	42.5	44.5	44.5	44.7	"

The wind continued to rage with great fury and the sea was extremely heavy. The day owing to the shifting of the wind round to the westward was partly clear with flying scud. Early in the morning saw Bogosloff under our lee. Though the vessel behaves nobly it is evident we cannot ride out 24 hours longer without going on a lee shore and we therefore determine to run for Chernoffsky Harbor, failing

to find which, we shall have the chance of escape through the Umnak Pass. Run down past the NE end of Umnak, which is high and rounded with a low bluff and short spit making out to the northward, over which most terrific breakers are rolling to the height of forty or fifty feet; and, Providentially succeed in finding the entrance to Chernoffsky Harbor where we anchor at 2.15 P.M. to the unspeakable relief of all hands. There is no doubt that our position was extremely perilous, before entering the harbor and the chances of getting out by the Pass of Umnak not favorable. Toward night the sky became clear but the gale continued to rage.

Thursday Sept. 30/80

Time.	Bar.	Ther.	Dry b.	Wet b.	Water	Wind
6 A.M.	29.32	39	40.5	40.5	44.7	SE
12 M.	.02	40	41.	41.5	44.2	"
6 P.M.	28.69	43	44	44.5	44.5	"

Day stormy, rainy and blowing hard. Work over monthly reports and journals and quarter by reports.

There are about a dozen native houses here two trading stations of the A.C. Co. & W. F. & T. Co. respectively; in charge of Messrs Wagner and Adolph Reinken. There are about 94 inhabitants not counting the whites.

Friday Oct 1st/80

Time.	Bar.	Ther.	Dry b.	Wet b.	Water	Wind
6 A.M.	28.56	41.5	44	44	43½	Baffling
12 M.	28.54	46.0	48	47.5	47	SSW
6 P.M.	28.54	44.5	45	44.5	46	SE

Day partly clear with flying scud, rainsqualls and very low barometer

Obs. for time latitude, magnetic and astronomical azimuth and angles for determination of station. Draw seine with poor success and fill water.

Make some comparisons of barometers with the mercurial standard, to determine if the aneroids are to be relied on, on account of the very low figures: - as follows.

Merc. stand. corr. to 32° F.	28.809	28.736	
Standard aneroid	28.68	-(12)	28.53
Casella aneroid	28.81		28.72
K. & E. aneroid	28.98	+(17)	28.88

The entrance to Chernoffsky Bay is well marked; first, by Aspidnoi (slate) Point about

2½ miles to the eastward (high black and peaked), second, by a prominent small rocky lump a quarter of a mile or more east of the east head and lastly by the narrow rocky promontories which form the heads. The harbor is excellent but the water rather deep. The land about is lower than at Hiulink and covered by rich black soil and a luxuriant growth of grass. There have been gardens here. The chief support of the people is the sea-otter, about 100 taken annually. Fourteen bidarkas hunt from this place. There is a shoal at Cove Pt. the turning point of the harbor extending WSW an eighth of a mile which is not on the chart and which we shall sound out. Our station is on the end of Cove point about ¾ of a mile from the village. Kasheega village to the eastward is situated on a small spit in a bay opening to the N. and W. It is not a good anchorage because the water behind the spit is too shoal for any thing but boats. At Makushin village a good anchorage is reported and some others unsurveyed between it and Chernoffsky.

Saturday Oct. 2/80

Time.	Barom.	Ther.	Dry b.	Wet b.	Water.	Wind
6 A.M.	28.62	40	41.5	42	44.5	E
12 M.	.82	48	50.5	49.5	46.5	NW
6 P.M.	.98	43.5	44.0	44	45.0	"

Day half clear. Wind moderate to fresh with occasional showers.

Observations for time latitude declination dip and intensity. Work over records.

Sunday Oct. 3rd

6 A.M.	29.45	42	44.5	44.5	45	WNW.
12 M.	.64	50	53	52	46.5	"
6 P.M.	.78	46	46	46	46	N.

Morning half rainy, later cloudy with showers. Wind light.

Sound on the shoal off (Observation) Cove Pt. The shoal extends broad off the point (WSW) regularly increasing in depth from the shore to 50 fathoms from the beach where the depth is three fathoms, while at 70 fathoms distance the depth is 5 fathoms. It is readily recognizable by the discolored water the bottom being white and shelly.

It extends from the extreme of the point in a WSW direction and is about three cables wide and does not reach to eastward of the extreme point.

Monday Oct. 4th 80

Time.	Barom.	Ther.	Dry b.	Wet b.	Water	Wind
6 A.M.	30.02	41	41.5	41.5	47	N
12 M.	.09	49	49	48.5	47.5	Calm
8 P.M.	.08	48	47	47	47.5	MMW

Day nearly clear till 10 A.M. then cloudy with heavy fog in evening. Wind light or none. Get under way early in the A.M. and work out toward the entrance against a very light wind which failing we return a short distance and anchor in the entrance of the inner bay.

Tuesday Oct 5th

4 A.M.	30.00	41	42.5	42	47	SE
8 "	29.95	42	43	43	46	ESE
12 M.	.92	42.5	45	45	45	SSW
4 P.M.	.82	42	43	43	45	W
8 "	.75	41	43.5	43.5	45	SE
12 "	.68	41	43.5	43.5	45	"

Day cloudy with showers. Wind light to fresh, boxing the compass

At 5.30 A.M. sail from Chernoffsky.

at 9.00 P.M. anchor in the outer roadstead of Captain's Bay, the weather being very dark and nasty. Saw the Dora going through Akutan Pass. The Corwin sailed hence for San Francisco on the 2nd instant.

Wednesday Oct 6th/80

Time.	Barom.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	29.60	40.5	43	42.5	42	SE
6 P.M.	.68	45.5	48	47.5	45.5	Calm

Day cloudy with glimpses of sunlight. Wind light variable. Move in to Shulink Harbor. Find the schs. Pauline Collins & Unalaska in port. The former is to sail immediately for San Francisco.

Receive our first and only mail of the season. Day spent in its examination and in preparing letters and accounts to go down by the Collins.

Thursday Oct 7th

6 A.M.	29.44	45.5	48.5	48.5	46	SW
12 M.	.52	46.0	49.5	50.0	47	"
6 P.M.	.46	45.0	45.5	45.5	46	Calm

Day more than half clear. Wind moderate. Sch. Pauline Collins sails for San Francisco with our mail.

Observations for time dip and intensity completing the season's field work as far as planned.

Repair & paint storehouse at this place and erect a fence around it and a break-water to keep the bank in front safe.

Friday Oct 8th 1880

Time.	Barom.	Ther.	Dry b.	Wet b.	Water.	Wind.
6 A.M.	29.24	40.0	42.5	42.0	44.5	SW
12 M.	.24	47.5	57.0	50.0	46.0	"
6 P.M.	.18	44.0	44.5	44.5	45.0	"

Morning cloudy. Later occasional rains. Wind fresh & cold but puffy. Continue repairs etc. on storehouse. Send boat out for salmon and obtain sixty seven. Work over records and preparations for sea.

Saturday Oct 9th

6 A.M.	29.16	40	41.0	41.0	44	SW
12 M.	.27	45	48.5	47.5	45.5	"
6 P.M.	.48	41.5	42.5	42.5	44	W

Day rainy & squally, snow falling on the uplands. More snow at night. Work over records & computations.

Sunday Oct 10th

6 A.M.	29.69	38.0	40	40.5	42.5	SW
12 M.	.80	42.5	45	44.5	44.5	NW
6 P.M.	.96	41.5	44	43.5	44.5	"

Day cloudy with rainsqualls. Much snow on the higher hills. Wind moderate to fresh.

Monday Oct 11th

6 A.M.	30.11	37.5	40.5	40.5	44.5	NNE
12 M.	.18	43.5	46.5	46.0	45.5	"
6 P.M.	.20	40.5	42.5	42.0	45.0	"

Day half clear. Wind light & cold. Fill water; get coal from Mr. F. M. Smith Deputy coll. of customs to the amount of a ton and a half from the government coal pile. Work over records & charts.

Tuesday Oct. 12/80

Time.	Bar.	Ther.	Dry b.	Wet b.	Water.	Wind.
6 A.M.	30.20	35	37.5	37	42	Calu
12 M.	.18	39	43.5	43	45	SE
6 P.M.	.10	39.5	42.5	42	44.5	"

Morning cloudy, wind light. Later rainy. Some snow fell on deck about noon. Send the boat out for codfish but the day is unfavorable, get only 20 and one halibut. Sch. Matthew Turner Andersen arrives from Michael's Redoubt & Nushagak with 500 lbs. salted salmon from the latter place. Get from Capt. Andersen the following observations made at St. Michael's by the officers of the Rush & the Jeannette in 1879. The variation was determined with an azimuth compass, the time and latitude by sextant and artificial horizon. The station was within the old Russian Redoubt near the site of the old bathhouse.

Mr. Danenhowe of the Leannette, June
19th 1879:-

Lat. N. $63^{\circ} 28' 17''$

Lon. W. $162^{\circ} 04' 45''$

Var. E. 24. 40

Lieut Haug of U.S. R. S. Rush

Lat. N. $63^{\circ} 29' 50''$

Lon. W. $162^{\circ} 05' 45''$

Var. E. 22 37

The position by bearings on Kyska etc.
for the shoal near Kyska was determined
by Capt. Andersen to be about

Lat. N. $52^{\circ} 07'$

Lon. E. $177^{\circ} 54'$

It is also mentioned in Capt. Bailey's report
on the cruise of the Rush.

The priest of Ilulink from a small patch
near Ulakhta head, has raised two crops of
turnips & radishes and one of good sized
potatoes (just harvested). There were 300
lbs of potatoes from two pecks of seed.

The first crop of turnips was large &
fine the second rather small sized, i.e.
the turnips themselves. The bishop talks
of residing and having a mission school
here.

Wednesday Oct 13, 1880

Time.	Barom.	Ther.	Dry b.	Wet b.	Water	Wind.
6 A.M.	29.88	40.5	42	42	44	NE
12 M.	.82	43.5	45	44.5	44	"
6 P.M.	.74	42.5	44	44	45	"

Day rainy & stormy. Wind fresh with
heavy squalls at night. Work over
computations and records.

Thursday Oct. 14th

6 A.M.	29.61	40.5	42	42	45	N
12 M.	48	39.5	40	40.5	44.5	"
6 P.M.	34	39.5	40.5	41.0	44.5	E

Day rainy & stormy. Wind fresh & squally
Work over records & computations.

Friday Oct. 15th

6 A.M.	29.20	42.5	44.0	44.5	44.5	SE
12 M.	.18	45.0	46.5	46.5	45.0	E
6 P.M.	.16	43.5	44.0	44.5	44.5	SW

Day rainy, glimpses of sun once or twice
Wind moderate. Work over records &
clerical work. Sent boat out codfish
ing. A good deal of snow on hill tops.

Saturday Oct. 16

6 A.M.	29.31	40.5	41.0	41.5	44	Caln
12 M.	.39	53.5	48.0	48.0	46	NE
6 P.M.	38	44.0	44	44.5	44.5	NW

Weather partly clear at times with drifting snow & fog. Rainy in P.M. Wind fresh to moderate.

Sunday Oct. 17th 1880

Time	Bar.	Ther.	Dry b.	Wet b.	Water	Wind.
6 A.M.	29.34	37.5	38	38.5	43	S.W.
12 M.	.35	39.5	41	41	44	S.
6 P.M.	.40	38.5	40	40	43	S.

Cloudy with showers: about sunset it clears off, promising fair for tomorrow. Wind variable to light. During the night a heavy snowfall coming down to 1000 feet on the hills. A little snow falls on deck in the early A.M. The sch. Matthew Turner sails for the westward.

Monday Oct. 18th

6 A.M.	29.64	38.5	41	41	44	N.W.
8 "	.74	40	42	42	44	"
12 M.	.78	40.5	42	42	45	"
4 P.M.	.80	40.5	42.5	42.5	46	N.
8 "	.82	38.5	41.5	41	46.5	"
12 "	.86	40	42	42.5	46.5	"

Day cloudy with a few rain squalls & fresh to moderate wind. Slip moorings about 6.30 A.M. and beat out of Captain's Bay. and just succeed in squeezing through

the Unalga Pass against the tide. Take our departure at 1.30 P.M. from Egg Id. en route for San Francisco.

Tuesday Oct. 19th 1880

Time	Bar.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	29.70	37.5	42	41	46	N.
8 "	.68	39	42	42	47	N by E.
12 M.	.64	40.5	42	42	47	"
4 P.M.	.69	44.5	42.5	42	46	"
8 "	.78	41	42	41	46	"
12 "	.84	42	44	43.5	47	"

Day cloudy with rain. Wind fresh with irregular choppy sea, which increase and oblige us to heave to about 3 P.M. in which condition we pass the rest of the day.

Wednesday Oct. 20th

4 A.M.	29.91	42	43	42.5	45	N by E.
8 "	30.11	41	44	44	48.5	"
12 M.	30.03	41	44	44	50	"
4 P.M.	29.99	41	44	44	48	"
8 "	.96	40.5	43.5	43	48.5	N.E.
12 "	.89	42	42	42	50	N.

Wind more moderate & sea more regular. Toward night wind increases. Day cloudy with rain squalls. Get under way again about 4 A.M. & run under short sail all day

Thursday Oct 21st/80

Time.	Bar.	Ther.	Dry b.	Wet b.	Water.	Wind
4 A.M.	29.82	43.5	48	46.5	50	N
8 "	.64	43	48	47	50.5	N N W
12 M.	.50	44	46.5	46.5	51	N W
4 P.M.	.26	44	45	44.5	50.5	N N W
8 "	.06	45	45	44	55	"
12 "	28.88	47.5	53	49	52	N

Cloudy, rainy with bad sea and stiff breeze
P.M. wind shifts and increases obliging
us to heave to again. Blows very hard
with shifting wind and low bar. in evening

Friday, Oct. 22, 1880

4 A.M.	28.84	49	52.5	49	52	N
8 "	.92	49	50.5	50	52	S W
12 M.	29.02	49.5	52.5	52	52	S S W
4 P.M.	.12	48.5	50.5	50.5	52	S
8 "	.25	49.5	51.5	51	52	S
12 "	.38	49	52	51	53	S S E.

Morning cloudy with showers and stiff
breeze. About 1.30 P.M. get under way
again, under close reefs & so remain.

Saturday Oct. 23

4 A.M.	29.34	48.5	50	49.5	52	S E.
8 "	.26	50	53	52	52.5	S E.
12 M.	.10	51	52.5	52	52.5	E. by N.

Time.	Bar.	Ther.	Dry b.	Wet b.	Water.	Wind.
4 P.M.	28.80	52	53	52.5	53	E.
8 "	.60	52	53	52.5	53	N E. by E.
12 "	.55	51	53	53.5	52.5	N E.

Stormy. The wind which has been ^{rather} light
in the early A.M., increases, shifts to the
eastward and blows very hard in
squalls. Toward evening a stiff gale
blowing and barometer down to 28.72
In the afternoon wear round on the port
tack and heave to. The continued rough
and adverse weather is very wearing
on all hands.

Sunday Oct. 24th

4 A.M.	28.64	52	53	53	54	N W
8 "	.88	50	51.5	51.5	52	"
12 M.	29.09	51	51	51	52	"
4 P.M.	.22	49	51	51	53.5	"
8 "	.34	49	52	53	54	"
12 "	.34	49	51	52	54	"

Day rainy clearing a little toward the
latter part with one or two glimpses of
sun. Wind shifts and becomes more
moderate. About 1 A.M. get under
way again, under close reefed foresail
and reefed jib.

Monday Oct. 25th 1880

Time	Bar.	Ther.	Dry b.	Wet b.	Water	Wind.
4 A.M.	29.18	48.5	51	51	53	NE.
8 "	28.99	45	52	52	54	N.
12 M.	29.22	45	51.5	51.5	53.5	NNW.
4 P.M.	.60	47	54	53.5	56	NNW.
8 "	.86	45	53.5	53	56	NNW.
12 "	30.04	45	49	49.5	56	"

Day mostly cloudy with some sunshine in P.M. Wind moderate with a heavy sea, several hail squalls.

Tuesday Oct. 26th

4 A.M.	30.11	45	49	49.5	59	NNW.
8 "	.28	46	50	49	59	"
12 M.	.33	49	50	51	58	"
4 P.M.	.33	51.5	53	51	58	"
8 "	.38	48	51.5	51	58	"
12 "	.39	48	52	51	57.5	"

Day nearly half clear, wind light. Swell subsiding somewhat. Put the fore peak halyards line at the mast head in the morning but make a shift with a chain to repair it. All sail set for the first time since we left the Pass.

Wednesday Oct 27/80

Time	Bar.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	30.38	49	53.5	51	59	NNW.
8 "	.40	49	56	57	61	"
12 M.	.40	51.5	56	53.5	61.5	"
4 P.M.	.38	55	56	55	61.5	"
8 "	.40	51	56	55	62	"
12 "	.38	52.5	56.5	54.5	61.5	"

Day fine, half cloudy, wind moderate to light, dying away in evening. The quiet weather affords us a much needed relief after our previous storms.

Thursday Oct. 28th

4 A.M.	30.34	53	54	53.5	62	NNW.
8 "	.34	57	56	55	62	"
12 M.	.30	55	59	57	65	ESE.
4 P.M.	.22	55	59	57	62	"
8 "	.15	57	61	59	62	"
12 "	.01	56	59	58.5	62	"

Weather cloudy, quiet. Wind light & shifts to the eastward. In the morning carry away the end of the fore gaff in the eyes of the downhaul, but this is easily repaired. Work over records for the first time since we left as the rough weather has not permitted it before.

Friday Oct. 29/80

Time.	Bar.	Ther.	Dry b.	Wet b.	water	Wind
4 A.M.	29.92	56.5	59	59.5	62	ESE.
8 "	.72	57	60	61	66	E.
12 M.	.58	60	63	63.5	63	E.
4 P.M.	.45	63	65	65	67	S.
8 "	.45	63	65	65	67	N.
12 "	.45	59.5	61.5	61	63.5	N.

Rainy & foggy. Very light wind & southerly swell. About 8 P.M. shifts & freshens.

Saturday Oct 30th

4 A.M.	29.48	59	62	61.5	64	N.N.W.
8 "	.62	58	62	61.5	66	"
12 M.	.70	56.4	55.5	54.5	66	N.W.
4 P.M.	.82	54	57.5	56.5	64.5	"
8 "	.98	52.5	57	55	65	N.N.W.
12 "	30.03	54	56	55.5	65.5	"

Weather cloudy. Fresh to strong wind and rather heavy swell.

Sunday Oct 31st

4 A.M.	30.08	52.5	57.5	56	64.5	N.N.W.
8 "	.11	53	57	56.5	66	"
12 M.	.08	55.5	61	60	65	S.W.
4 P.M.	.08	53	60	56.5	64	S.
8 "	.08	53.5	60	56.5	64	S.
12 "	.08	58.5	63	60.5	65	S.

Cloudy with light air. Later fresh wind.

Monday Nov. 1, 1880

Time.	Bar.	Ther.	Dry b.	Wet b.	water	Wind
4 A.M.	30.05	59	63	63	66	S.
8 "	.06	60.5	64	61.5	65.5	S.S.W.
12 M.	.06	64	66	65	66	"
4 P.M.	.06	64	67.5	65	66.5	"
8 "	.10	63.5	67	66	66	"
12 "	.12	64	67	66	66	"

Weather 3/4 cloudy with fresh breeze and rather choppy sea. Work over records.

Tuesday Nov. 2

4 A.M.	30.14	64.5	67	66	66	S.S.W.
8 "	.18	64	67	67	66	S.W.
12 M.	.24	66.5	69	68	66	"
4 P.M.	.24	64	68	68	66	"
8 "	.26	64	65.5	65.5	65.5	"
12 "	.32	64	67	66.5	66	"

Foggy with light wind & occasional rains

Wednesday Nov. 3

4 A.M.	30.32	64	67	66	66	S.W.
8 "	.34	63.5	65.5	65	66	N.N.W.
12 M.	.35	64	66	66	66	N.W.
4 P.M.	.35	64.5	66.5	66.5	66	N.N.E.
8 "	.36	62	63.5	63.5	66	N.E.
12 "	.35	61	63	63	66	N.N.E.

Foggy with light air. Work over records.

Thursday Nov. 4, 1880

Time	Bar.	Ther.	Dry b.	Wet b.	Water	Wind
4 A.M.	30.35	60.5	62.5	62	64.5	N. by E.
8 "	.38	62	61	60	65	"
12 M.	.39	61.5	61.5	62	63	"
4 P.M.	.28	61	61	61	62.5	N.
8 "	.26	60	60	60	62	"
12 "	.22	63	60.5	60	62	"

Foggy with fresh breeze, stronger in P.M. when it clears away.

Friday Nov. 5th

4 A.M.	30.18	62	61	60	61.5	N.
8 "	.18	55.5	58.5	58.5	58	"
12 M.	.16	57	58.5	59	56	"
4 P.M.	.12	61	60.5	61	58.5	N.W.
8 "	.12	56.5	59.5	58.5	59.5	"
12 "	.10	56	58	58	60	"

Clear all day with moderate breeze

Saturday Nov. 6

4 A.M.	30.10	55	57	56.5	56	E. by N.
8 "	.11	55	57	57	56	
12 M.	.10	67	62	61.5	59	

Wind light; weather foggy. Clears and wind freshens at noon. At 4.25 anchor off Meiggs wharf, San Francisco.

Sunday Nov. 7th, 1880

Time	Bar.	Therm.	Dry b.	Wet b.	Water	Wind
6 A.M.	30.19	52	54	54.5	58	—
12 M.	.10	60	67	66	57.5	—
6 P.M.	.10	54	56	56	59	—

Weather fine; wind moderate to fresh.

Monday, Nov. 8th

6 A.M.	30.06	56	57	57	59	calm
12 M.	.04	59.5	63½	65	59.5	N.W.
6 P.M.	29.98	58	64	62	58	N.W.

Weather fine; wind moderate.

Tuesday Nov. 9th

6 A.M.	30.00	52	52	52	58	—
12 M.	.04	58.5	60	61.5	59	—
6 P.M.	.02	58	58½	58	57.5	N.W.

Weather hazy; wind fresh.

Wednesday Nov. 10th

6 A.M.	30.16	49	50	50.5	52	N.
12 M.	.18	51.5	51.5	50.5	58.5	N.
6 P.M.	.12	55	57	56	58	N.W.

Clear and fine; wind light.

Thursday Nov. 11th

6 A.M.	30.20	50	52	52	59	N.
12 M.	.20	52.5	57.5	56.5	58	N.
6 P.M.	.20	55	57	57	58	N.

Weather hazy; wind moderate to fresh.

Friday Nov. 12th 1880

Time	Bar.	Therm.	Dry b.	Wet b.	Water.	Wind.
6 A.M.	30.20	52	57	56	53	N.
12 M.	.22	57	59	58.5	57	
6 P.M.	.20	58	55	54	57.5	

Weather fine; wind moderate.

Saturday Nov. 13th

6 A.M.	30.19	53	55	54	57	NE.
12 M.	.20	58.5	60	59.5	56.5	E.
6 P.M.	.18	62.5	63	64.5	57	calm

Weather hazy; wind light.

Sunday Nov. 14th

6 A.M.	30.30	55	55	54	55	E.
12 M.	.42	58	55	52	56	NW.
6 P.M.	.39	57	51	50	55	NW.

Weather fine; wind moderate.

Monday Nov. 15th

6 A.M.	30.38	54	54	53	56	E.
12 M.	.28	59	59	59.5	57	
6 P.M.	.15	56	56.5	56	57	

Morning fine; wind fresh.

U. S. C. & G. S.
 Carlisle P. Patterson, Superintendent.
1880.
 Section XII.

Sea Temperatures
 at the surface, bottom and at various depths
 in

Bering Sea and Arctic Ocean.
 with other hydrographic notes

by the hydrographic party on board the

U. S. C. & G. S. Sch. Yukon.

W. H. Dall Acty. Asst. in charge.

Note: All temperatures are expressed in Fahrenheit degrees
 and all depths in fathoms.

Station Cape Lisburne Arctic Ocean, $\frac{3}{4}$ mile
 off shore.

Date 1880, August 21, 9.30 A.M.

Wind light N.E., Sky overcast. Temp. of air 50°.

Depth	Temperature
Bottom $6\frac{3}{4}$	48 $\frac{1}{8}$
6	48 $\frac{1}{2}$
5	48 $\frac{1}{2}$
3	48 $\frac{3}{4}$
Top	49 $\frac{1}{8}$

Station Anchorage off Point Belcher, Arctic Ocean

Date 1880, August 28, 8 A.M.

Wind fresh N.E. Sky overcast. Temp. of air 40°.

Depth	Temperature
Bottom 9	41 $\frac{3}{4}$
Top	42 $\frac{3}{4}$

Station At Sea { Lat. 64-25 } { Long. 172-04 } { U.S. Hyd. Cl. 2068. }

Date 1880, August 15 7 1/2 A.M.

Weather Hazy clear + calm. Temp. of air - 45°

Astronomical Observations were made to locate this station - see Astronomical Observations Vol. 1 1880. p. 79.

Bearings also were taken for which - see Helimeter Notes 1880. Vol. 2 p. 105

Depth	Temperature
10	38
Top	38 1/2

Soundings and Temperature in Bering Strait.
Date 1880, September 5th Sunday.

Depth	Temperature	Remarks
Bottom 28	37 1/2	at 7 ⁰⁵ A.M. Edge of E. Cape of Asia bore } S 3/4 N 1/2 E N 1/2 E N. Vessel under foresail + jib Strong N.W. wind, Sea rough small and large ice in water. a little further in closely packed
25	37 1/8	
20	36 3/4	
15	37	
10	37 1/2	
5	37 1/2	at 7 ²⁰ Log set on zero; course E. Magnetic (if anything she made to weather of the course) 7 ³⁰ A.M. 7 ⁴⁰ 7 ⁴⁵ Big Diomed N edge bears S. E. 1/4 E) 7 ⁵⁰ - Air 37 1/2 - 8.00 Come to. Log reads 4 miles. Temp. of air 38.
Top	38	
"	37	
"		
"	36 1/2	
Bottom 26	36 3/4	
20	37	
15	37 1/8	
10	37 1/8	
5	37 1/4	

Surface water temp.

Depth	Temperature	Remarks
Top	37 ³ / ₈	8.12 - Kept off - Air 38°
Top	37 ¹ / ₂	8.20
"	38 ¹ / ₂	8.30
"	39 ³ / ₄	8.40
		8.50 Come to. Log reads 8 miles
	3	Temp. of air 38°
Bottom 25	39 ¹ / ₂	E. edge of Big Diomedes S. by S.
20	40 ¹ / ₄	W. " " " S. ³ / ₄ E.
15	40 ¹ / ₂	E. " " Little " S. ³ / ₄ S.
10	40 ³ / ₄	
5	41 ¹ / ₄	
Top	41 ¹ / ₄	9.00 Kept off O. Temp. of air 38°
Top	41 ³ / ₈	9.10
Top	42	9.20
Top	42	9.30
Top	41 ¹ / ₂	9.40
Top	42 ⁷ / ₈	9.50 Come to. Log reads 14 ¹ / ₂ miles.
		Temp. of air 40°
		W. edge of Big Diomedes S. by N. ¹ / ₂ W.
		E. " " " S. ¹ / ₄ W.
		E. " " Little " S. by E. ¹ / ₄ E.
	4	
Bottom 26	41 ³ / ₄	
20	40 ¹ / ₂	

Depth	Temperature	Remarks
Bottom 15	39 ³ / ₄	
10	42 ¹ / ₄	
5	43	
Top	43 ¹ / ₂	10. AM. Kept off.
Top	44 ¹ / ₈	10.10 Kept off. O by S. Log reads 16 miles
Top	45	10.20
Top	45 ⁵ / ₈	10.30
Top	45 ³ / ₄	10.40
	5	
Bottom 26 ¹ / ₂	45 ¹ / ₄	10.50 AM. Log reads 20 ¹ / ₄ miles
20	45 ¹ / ₄	Temp. of air 40 ³ / ₄ Bar. 29.46.
15	45 ³ / ₄	Sky partly clear - wind fresh - sea
10	45 ³ / ₄	Wavy indicating current to northward
5	46 ¹ / ₂	W. edge of Big Diomedes S. N. ¹ / ₂ W.
Top	46 ¹ / ₂	E. " " " S. by N. ¹ / ₂ W.
		E. " of Little " S. by W.
		Cape Prince of Wales S. ³ / ₄ E.
		11 o'clock Kept her off. O by S.
Top	47 ¹ / ₄	11.10 A.M.
"	47 ¹ / ₄	11.20 "
"	47 ¹ / ₄	11.30 "
"	47 ¹ / ₄	11.40.

Depth	Temperature	Remarks
Bottom 28	46 ⁰ / ₂	11 ^h 50 ^m A.M. Log reads 27 miles
20	46 ³ / ₄	Temp. of air 41° Barom 29.44
15	46 ¹ / ₄	
10	47 ¹ / ₂	Cape Prince of Wales S.E. 3/4 S.
5	47 ³ / ₄	Fairway Rock S by W.
Top	47 ¹ / ₂	W. edge of Little Niomed S.W. 1/4 S.
		W. " " Big " S.W. by N. 1/4 W.
		Kept her off E.S.E. from here at 12 m.
Top	47 ⁰ / ₂	12.10 P.M.
"	47 ¹ / ₂	20 "
"	47 ³ / ₄	30 "
"	47 ³ / ₄	36 "
Bottom 23	46 ⁰ / ₃	12.50 P.M. Log reads 33 miles
20	47 ¹ / ₈	Temp. of air 42° Barom 29.43
15	47 ¹ / ₂	
10	47 ¹ / ₂	Cape Prince of Wales S.E. by S. 1/2 S.
5	48	
Top	48	Mountains S. 3/4 S.
		1.04 P.M. Kept off S.E. S.
Top	47 ¹ / ₂	1.10 P.M.
"	47 ³ / ₄	20 "

Depth	Temperature	Remarks
Top	47 ³ / ₄	1.30 P.M.
"	47 ¹ / ₂	40 "
"	46 ³ / ₄	50 "
"	46 ⁷ / ₈	2.00 "
"	46 ³ / ₈	10 "
	8	
Bottom 23	46 ⁰ / ₈	2.15 P.M. Log reads 41 miles
15	46 ¹ / ₂	Temp. of air 46 ¹ / ₂ Barom. 29.40
10	46 ¹ / ₂	
5	46 ⁷ / ₈	Lat. 63° 38' N.
Top	46 ⁷ / ₈	Lon. 168° 09' W.
		Fairway Rock W. by S. 1/2 S.
		Cape Prince of Wales East.
		2.25 ¹ / ₂ P.M. Kept off - S.E.
Top	47 ⁰ / ₂	2.45 P.M.
"	47 ¹ / ₈	3.15 "
"	47 ¹ / ₄	3.45 "
"	47 ¹ / ₂	4.15 "
"	47 ¹ / ₄	4.45 "
"	47	8.00 " anchor in entrance of
		Port Clarence

Station Anchorage off Big Niomede Id. Bering Str
Date 1880, Sept 10 - Friday
Wind fresh N.N.W. to N. (Mag) Temp. of air 38° @ 7 A.M.

Bearings from anchorage

Fairway Rock S. S. E. 1/8 E

Little Niomede { S by N 1/4 N
 N. E. 1/8 N.

Big Niomede { N. 1/4 E.
 N. 1/4 N.

Depth	Temperature	Time	Remarks
Top	43 1/2	7 A.M.	At 7 A.M. tide running to
"	44	8.30	N.E. and holding vessel broad
"	44	9—	side to the wind. at 7.50 ship
"	44	9.30	swung around and at 8.10 the
Top	44		tide held her port side to the
5	44		wind as before it had held
10	43 1/4		the starboard.
15	42 1/2	10—	Serial soundings Temp.
20	42 1/2		with Sp. Gravity Cup.
23	42 1/2		
23	41.3*	10-10	Sp. Gr. = .1024
Top	44 1/3	10-10	" " = .1023.
Top	44 1/4	10.30	* Bottom temp. here is too cool from evaporation from the cup while standing in the wind.

Depth	Temperature	Time	Remarks
Top	44 1/2	11. A.M.	
"	44 1/2	11.30	
"	44 3/4	12.00	
"	44 3/4	12.30 ^{P.M.}	
"	44 3/4	1.00 P.M.	
"	44 3/4	1.30	
"	44 1/2	2.00	
"	45	3.00	Made sail direct course for Indian Pt.

Surface current here 1 ft. per
 second N. by S.

Bearings after swinging

Sledge Cape N. by N 1/2 N.
 " " Big Niomede N.W. by N. 1/2 W.
 Obs. Spot (= Astronomical Station) N by N 1/4 N.
 N. edge Big Niomede N. 1/2 E.
 W. " Little " N. E. 1/2 N.
 E. " " " E. by N 3/4 N.*
 Fairway Rock S. S. E. +
 Cape Prince of Wales S 1/2 S +

* S 78 1/4 N
 + ? S by S 1/2 S. Oct. 18th
 † E. Oct. 16th

Sept 10 - 1880

Depth	Temperature	Time	Remarks
Top	44 1/2	3.30	
"	44 1/2	4.00	Air 40 1/2
"	44 1/2	4.30	
"	44 1/2	5 P.M.	
"	44.0	5.30	
"	43 1/4	6.00	
"	43	6.30	
"	44	7.00	
"	36 1/2	7.30	
"	37	8.00	Air 36 1/2
"	36 1/4	8.30	
"	36.0	9.00	
"	36.0	9.30	
"	35 1/2	10.00	
"	35 1/4	10.30	
"	35	11.00	
"	35 1/2	11.30	
"	36	12.00 P.M.	Air 36
"		Sept. 11 th 1880	
"	36	12.30 A.M.	
"	36 1/2	1.00	
"	37	1.30	Came to - air 41 1/2
"	37	2.00	
"	36 1/2	2.30	
"	36	3.00	
"	36	3.30	

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Depth	Temperature	Time	Remarks
Surface	36	4.00	Made sail - course S to S am.
"	36	4.30	air 35 1/2
"	36	5.00	Course S.S.W.
"	37	5.30	
"	38	6.00	
"	40	6.30	
"	40 1/2	7.00	
"	39 1/2	7.30	
"	38	8.00	Air 36 1/2
"	37 1/2	8.30	
"	37 1/2	9.00	
"	37 1/2	9.30	
"	38 1/2	10.00	
"	41	10.30	Indian Pt. + land beyond in one 7/16 1/2 m. at 10.30 am.
Top	40	11.00	
"	40 1/2	11.30	
"	37 1/3	12. m.	Air 38 1/2
"	38	12.30 P.M.	
"	38 1/2	1 P.M.	
"	38	2 "	
"	37 1/2	3 "	
"	37 1/2	4 "	Air 40
"	38	5 "	
"	38	6 "	
3'	37 1/2	7	

Depth	Temperature	Time	Remarks
Top	37	8 P.M.	Air 39°
"	37	9 "	
"	37	10 "	Becalm'd
"	37	11 "	"
Sept. 12 th 1880			
"	36	12 A.M.	Air 37° Becalm'd
"	36	1 " "	"
"	36	2 " "	"
"	36	3 " "	Becalm'd South of Plover Bay
"	36	4 " "	Air 35 1/2 "
"	36	5 " "	
"	36 1/2	6 " "	
"	37 1/2	7 " "	About this time enter the heads
"	38	8 " "	of Plover Bay. Air 37°
"	38	9 " "	
"	38	10 " "	
"	40	11 " "	
"	39 1/2	12 M	Air 42 1/2 Come to anchor 11.45

Temperature of surface water taken hourly on
voyage from Plover Bay, Siberia to Unalaska Id.
"U.S.S. Yukon" Friday Sept 17th 1880

Temp.	Time.	Sept. 18 th '80	Sept. 18 th Contd.	Temp.	Time
38 1/4	9 A.M.	Temp.	Time	45 1/2	7 P.M.
38 1/4	10 "	44	1 A.M.	45 1/2	8 "
38 1/2	11 "	43 1/2	2 "	46	9 "
38	12 Noon	44	3 "	45 1/2	10 "
38	1 P.M.	45	4 "	45	11 "
38 1/2	2 "	43	5 "	44 1/2	12 "
39 1/2	3 "	43 1/2	6 "	45 1/2	1 A.M.
40	4 "	43 3/4	7 "	45 1/2	2 "
43	5 "	44	8 "	45	3 "
42 1/2	6 "	45	9 "	45	4 "
44	7 "	45 1/2	10 "	45 1/2	5 "
43 1/2	8 "	45	11 "	45	6 "
41	9 "	45	12 Noon	45 1/2	7 "
42	10 "	44 1/2	1 P.M.	45 1/2	8 "
43	11 "	44 1/2	2 "	43	9 "
44	12 "	44 1/2	3 "	42 3/4	10 "
		44 1/2	4 "	43	11 "
		44	5 "	42 3/4	12 Noon
		44 1/2	6 "	44	1 P.M.
		45	7 "	45 1/2	2 "
		45	8 "	45 1/2	3 "
		45 1/2	9 "	45	4 "
		45 1/2	10 "	46	5 "
				45 3/4	6 "

Surface sea water -

Sept. 20 th 1880		Sept. 21 st 1880		Sept. 22 nd 1880	
Temp	Time	Temp	Time	Temp.	Time.
44	1 A.M.	42 1/2	1 A.M.	43	1 A.M.
45	2 "	42 1/2	2 "	43	2 "
44 1/2	3 "	42 1/2	3 "	43	3 "
45	4 "	42 1/2	4 "	43 1/2	4 "
44	5 "	42	5 "	43 1/2	5 "
43 1/2	6 "	42 1/2	6 "	43 1/2	6 "
43 1/2	7 "	44	7 "	44	7 "
44	8 "	44	8 "	44	8 "
44	9 "	43	9 "	44	9 "
44 1/2	10 "	43	10 "	43	10 "
45	11 "	43 1/2	11 "	43	11 "
44	12 noon	43 1/2	12 Noon	42	12 Noon
43 1/2	1 P.M.	44	1 P.M.	42 1/2	1 P.M.
43 1/2	2 "	44	2 "	42 1/2	2 "
43 1/2	3 "	44	3 "	42 1/2	3 "
43 1/2	4 "	44	4 "	43	4 "
43 1/2	5 "	44	5 "	42 1/2	5 "
43	6 "	43 1/2	6 "	43	6 "
42 1/2	7 "	43	7 "	43	7 "
42 1/2	8 "	43	8 "	43 1/2	8 "
42	9 "	43	9 "	44	9 "
42	10 "	43	10 "	44 1/2	10 "
42 1/2	11 "	43	11 "	45	11 "
43	12 "	43	12 "	45	12 "

Surface sea water -

Sept. 23 rd 1880		Sept. 24 th 1880		Sept. 25 th 1880	
Temp.	Time	Temp.	Time	Temp.	Time.
44 1/2	1 A.M.	45 1/2	1 A.M.	46 1/2	1 A.M.
44 1/2	2 "	45 1/2	2 "	46 1/2	2. "
44 1/2	3 "	45 1/2	3 "	46 3/4	3 "
44 1/2	4 "	46	4 "	47	4 "
44 1/2	5 "	46 1/2	5 "	47	5 "
45	6 "	46 3/4	6 "	47	6 "
45	7 "	47	7 "	47	7 "
45 1/2	8 "	47	8 "	47	8 "
45 1/2	9 "	47	9 "	47	9 "
45 1/2	10 "	47	10 "	47	10 "
45 1/2	11 "	47	11 "	47	11 "
45 1/2	12 Noon	47 1/2	12 Noon	47	12 Noon
45	1 P.M.	47 1/4	1 P.M.	47	1 P.M.
45	2 "	47 1/4	2 "	47	2 "
45	3 "	47 1/4	3 "	47	3 "
45	4 "	47 1/4	4 "	47	4 "
45 1/2	5 "	47 1/2	5 "	46	5 "
45 1/2	6 "	47 1/2	6 "	46	6 "
45 1/2	7 "	47 1/4	7 "	46	7 "
45 1/2	8 "	47	8 "	46	8 "
45 1/2	9 "	47	9 "	46	9 "
45 1/2	10 "	46 1/2	10 "	46	10 "
45 1/2	11 "	47	11 "	46	11 "
45 1/2	12 "	46	12 "	46	12 "

Surface Sea water.

Sept. 26 th 1880		Sept. 27 th 1880		Sept. 28 th 1880	
Temp.	Time.	Temp.	Time	Temp.	Time
46	1 A.M.	46 1/2	1 A.M.	45 1/2	1 A.M.
46	2 "	46 1/2	2 "	45 1/2	2 "
46	3 "	46	3 "	45 1/2	3 "
46	4 "	46	4 "	45 1/2	4 "
46 1/2	5 "	46	5 "	45 1/2	5 "
46 1/2	6 "	46	6 "	45 1/2	6 "
46 1/2	7 "	46	7 "	45 1/2	7 "
46 1/2	8 "	46	8 "	45 1/2	8 "
46	9 "	46	9 "	45 1/2	9 "
46	10 "	46	10 "	45 1/2	10 "
47	11 "	46 1/2	11 "	45 1/2	11 "
47	12 Noon	46 1/2	12 Noon	45 1/2	12 Noon
46 3/4	1 P.M.	46	1 P.M.	45 1/2	1 P.M.
46 3/4	2 "	46	2 "	45	2 "
46 3/4	3 "	46	3 "	44 1/2	3 "
46 3/4	4 "	46	4 "	44 1/2	4 "
46	5 "	46	5 "	44 1/2	5 "
46	6 "	46	6 "	44 1/2	6 "
46	7 "	46	7 "	44	7 "
46	8 "	45 1/2	8 "	43 3/4	8 "
46	9 "	45 1/2	9 "	43	9 "
46	10 "	45 1/2	10 "	43	10 "
46 1/2	11 "	45 1/2	11 "	43	11 "
46 1/2	12 "	45 1/2	12 "	43	12 "

Surface Sea water.

Sept. 29 th 1880	Surface Sea water from Plover Bay to Unalashka.
Temp.	Time
43	1 A.M.
43	2 "
43	3 "
43	4 "
43	5 "
43	6 "
43	7 "
43	8 "
44 1/2	12 Noon

Native Names - Sept. 10th 80

Ing-ah-khlük' - Little Niomede
 Imah-khlük' - Big "
 Mee-yük - Fairway Rock
 Mū-wūkh' - East Cape

People on

Ing-ah-khlē-mūt - Little Niomede
 Imah-khlē-mūt - Big "
 Mo-ghwah-mūt - East Cape
 Kūghūkh-tūg'-ū-mūt - Chūck-chi
 Mūghū - Eider duck

Sept. 12th 80.

Corneli says Reindeer men call themselves
 Tsanytiat.

Native says Plover Bay people call
 themselves Ol'yūk.

102 490 per p. 200

100

25 4
 8
 32

35

78
 280
 245
 273 0

Native Names - Sept. 10th 80

Inq-ah-khlik'	Little Niomede
Imah-khlik'	Big "
Mee-yuk	Fairway Rock
Nu-wukh'	East Cape

People on

Inq-ah-khlee-mut	Little Niomede
Imah-khlee-mut	Big "
No-ghwah-mut	East Cape
Kighukh-tuz'-u-mut	Chuck-chi
Nuqhūn	Eider duck

Sept. 12th 80.

Corneli says Reindeer men call themselves Tsanyuat.

Native says Plover Bay people call themselves El'yuk.

24) 150 06

6729
66.13

18

7

126

35

161

26

187

209

22

SSW 1/4 W. 21

1.16

66.35

67.51

68.09

18

10

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